

THIRTEEN SPECIES OF *MYCETOPHILA* MEIGEN (DIPTERA: MYCETOPHILIDAE) NEW TO THE BRITISH LIST

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Mycetophila is the largest genus of fungus gnats in the British fauna and the additions here increase the list to 70, i.e. 29 species over those dealt with by Edwards (1925) who provided the only published key to the British species. Edwards (1926, 1941) added eight species. Further species were added by Kidd & Ackland (1970), Laštovka & Kidd (1974) and Chandler (1977*a,b*). Species included here have been recognized in collections or discovered anew in the past 10 years; two of them, *abiecta* Laštovka and *sumavica* Laštovka were recorded from Ireland by Chandler (1987).

Reference is made as to where species run in Edwards' (1925) key (which relied largely on colour characters) and Laffoon's (1956) key to the Nearctic species (based more on structural and chaetotactic characters). Most *Mycetophila* have brown wing markings, whose distribution is often characteristic. Also the colour of the thoracic dorsum (mesoscutum) is frequently constant and useful for recognition. Laffoon made considerable use of the chaetotactic characters of the legs, arranging the species in six groups on the distribution of setae and colour of setulae on the tibiae. A combination of these characters permits the identification of most species on external characters and have assisted association of the sexes. However, all external characters may be variable and confirmation from the genital structure is essential.

Males of most *Mycetophila* are readily recognized from their genital structure without dissection owing to the wide range of form within the genus, but more critical examination is necessary in some groups of closely related species such as the *ruficollis* and *vittipes* groups. Females of more than 50 British species have been certainly recognized and their identification is aided by ovipositor characters and in some cases the degree of thickening of the fore tarsi.

The *ruficollis* Meigen group

Laštovka (1972) revised this group, recognizing 11 species in the Holarctic. Laffoon (1956) had previously realized that the *lineola* Meig. of earlier authors was a complex of species, and the composition of the group in Britain was clarified by Laštovka & Kidd (1974), who found four species in the material they examined. Two further species may now be added, both mainly Scottish in distribution; both can be recognized from the genitalia figures given by Laštovka (1972).

Mycetophila evanida Laštovka, 1972

This is evidently widespread in Scotland and has been seen from a good number of localities in Ross, Inverness, Perthshire and Argyll. It has been recorded from Scandinavia, central Europe and Mongolia (Laštovka, 1972; Plassmann, 1976, 1980*a,b*).

Mycetophila uninotata Zetterstedt, 1852

This was raised from synonymy by Laštovka (1972), who recorded it from Norway, Austria and Czechoslovakia; Plassmann (1980*a,b*) added records from Sweden and the German Alps. It is another mainly Scottish species (several localities in Sutherland, Ross, Inverness and Perthshire) and seen from Durham, Sleightholme Beck, 23.vi.1981.

Mycetophila czizeki Landrock, 1911

M. sordida Wulp was recorded under the name *czizeki* by Edwards (1925) and the two species are very close. Laffoon established that the British material was *sordida* and the true *czizeki* has only recently been discovered in Britain. According to Landrock (1940) and Matile (1977) *czizeki* is the commoner species in France and Germany but *sordida* has a wider overall distribution, being Holarctic. *M. sordida* is not common here but has been seen from southern England, the Scottish Highlands and Ireland while *czizeki* has been found only in northern England.

Landrock (1911, 1927, 1940) figured the genitalia of *czizeki*. External characters are very similar but *czizeki* is a little darker; specimens examined have the thoracic stripes more approximated and the hind femur darkened at the tip and vaguely along the dorsal margin; the hind femur is entirely yellow in specimens of *sordida* examined, although said to be sometimes dusky apically by Laffoon.

Material examined. N. Yorks.: Castle Bolton Woods, 3.x.1985, ♂ (M. Pugh); Birkbeck Wood, 27.vi.1981, ♂ (I. F. G. McLean); Rake Beck, 4.x.1985, ♂ (I. F. G. McLean); Durham: Castle Eden Dene, 14.ix.1981, ♂ (J. H. Cole).

The *vittipes* Zetterstedt Group

This is a well defined group within Laffoon's group 6, which was defined and revised in Europe by Laštovka (1963). More species were found in North America although several evidently formed species pairs with European species. Laštovka recognized nine species but only three of these (*vittipes* Zett.; *gibbula* Edwards; *bohémica* (Laštovka)) have hitherto been recorded as British. A further three are added here, which may be recognized from the keys and figures provided by Laštovka. All species of the group run to couplet 19 in Edwards' key and the structural differences are small. *M. vittipes* is the only common species of the group; of the six British species, only *vittipes* and *schnabli* have the median flagellar segments more than twice as long as broad, and in other species the antennae are relatively short, but obviously longer than the head and thorax together.

Mycetophila schnabli (Dziedzicki, 1884)

This is the largest (wing length over 5 mm) and most distinctive member of the group, but is closely related to the Nearctic *propinqua* Walker. It has the thoracic dorsum broadly yellow laterally and on the humeral areas, leaving three fused dull brown stripes on the disc. It is frequent in Scandinavia; Plassmann (1970) recorded it from Austria and Matile (1977) recorded it from France (Drôme).

Material examined. Inverness: Glen Affric, 19.vi.1981, ♂ (A. E. Stubbs).

Mycetophila abiecta (Laštovka, 1963)

This and the next species are very close in all respects but small differences in the genitalia appear to be constant. Both are variable in the extent of the wing markings and the more strongly marked examples, which are more frequent in *abiecta*, usually have the mid and hind coxae entirely dark but specimens with the coxae entirely yellow are also frequent. This type of variation occurs also in *vittipes* and in the two British *Platurocypta* species. *M. abiecta* and *M. sumavica* are usually smaller than *vittipes* (wing length range 2.3–3.2 mm, *vittipes* 2.5–3.9 mm). *M. abiecta* has a long flight period (iii–iv, vii–xi) but is more frequent in the autumn.

Material examined. 29 ♂ and 10 ♀ from 16 localities in England and Wales; only females recorded from Ireland (Chandler, 1987) so confirmation desirable.

Mycetophila sumavica (Laštovka, 1963)

Most examples of *sumavica* seen have the coxae entirely yellow (some from Logie have the mid and hind coxae dark) and the hind femur more narrowly darkened apically than is usual in *abjecta*, but examination of male genitalia is essential. Both *abjecta* and *sumavica* have the thoracic dorsum mainly dark brown and grey dusted with only a narrow yellow humeral mark. *M. sumavica* has a long flight period (vi–x).

Material examined, 17 ♂ and 8 ♀ from 16 localities, mainly in Scotland and Ireland, but also North Wales, Yorks., Northumberland and Hereford.

Mycetophila abbreviata Landrock, 1914

This is a very distinctive species, belonging on genital structure to the *pictula* group (Chandler, 1977a) and the female has single segmented cerci like other members of this group. It, however, differs from other species in lacking an a–d seta on the mid tibia so runs to Laffoon's group B (where it comes to couplet 10) and in the preapical wing marking being entirely beyond the tip of R1. In Edwards' key it runs to *finlandica* Edwards, as does *mohilevensis* Dziedzicki (see below) but differs from both in the thoracic colouration as the dark stripes are practically fused to form a dark grey dusted disc surrounded by broadly yellow sides and humeral areas. Landrock (1914) described *abbreviata* on a male from Czechoslovakia, while Lundström (1916) described it from Hungary as *luteiventris*; both figured the male genitalia. Plassmann (1980b) recorded it from Sweden. In Britain it appears to be confined to the Scottish Highlands. Wing length of ♂ 3.6–3.9 mm, ♀ 3.8–4.2 mm.

Material examined. Sutherland: Migdale Wood, 11.vi.1984, 2 ♂, 1 ♀ (P. J. Chandler); Ross: Rogie Falls, 15.vi.1984, 7 ♂, 3 ♀ (I. F. G. McLean); Alness, 16.vi.1984, ♀ (A. E. Stubbs); Inverness: Belladrum Burn, 16.vi.1984, ♀ (A. E. Stubbs); Feshie Bridge, 29.v.1973, ♀; Inshriach Forest, 17.viii.1986, ♂ (P. J. Chandler); Nairn: Banchor, 19.vi.1982, ♂, 2 ♀ (I. F. G. McLean); Cawdor Wood, 12.vi.1984, ♀ (A. E. Stubbs).

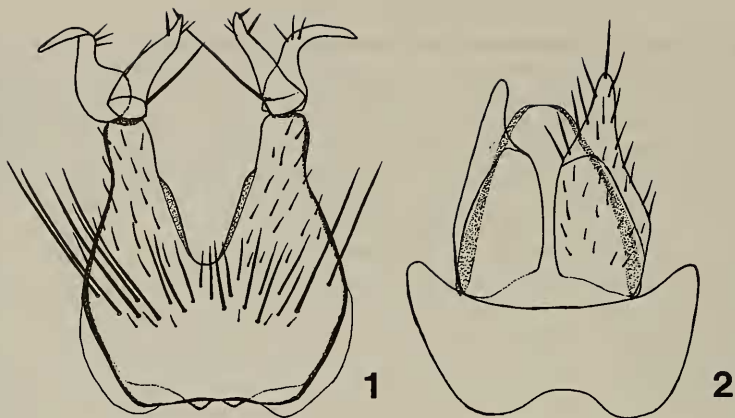
Mycetophila lapponica Lundström, 1906

Another recently discovered 'Scottish' species. Lundström figured the male genitalia and described both sexes from Finnish Lapland. It had been found in association with polypore fungi at two localities, in one case on birch. Plassmann (1976, 1979) recorded it from Sweden. In Edwards' key *lapponica* runs to *occultans* Lundström, from which it differs in a more strongly shining thorax and a distinct preapical wing band as well as only strong dorsal setae on the hind tibia. It belongs to Laffoon's group E and runs like the new species described below to couplet 4; the entirely dark thoracic dorsum distinguishes it from *uliginosa* sp. n and the genital structure is quite different.

Material examined. Ross: Beinn Eighe N.N.R., 10.vi.1984, ♀ (I. F. G. McLean); Perthshire: Rannoch, Camghouran birchwood, 31.viii.1987, ♂ (P. J. Chandler).

Mycetophila uliginosa sp. nov.

Male. Head shining black; antennae brown with basal segments, entire basal flagellar segment and second flagellar segment ventrally yellow; palpi yellow. Thorax brown; mesoscutum (dorsum) shining with large humeral areas, smaller post-humeral patches and small median prescutellar spot yellow; scutellum yellow on apical half; anterior spiracle yellow; most hairs and bristles yellow, only stronger ones brown; three mesepimeral (pteropleural) bristles; four scutellars. Abdomen dark brown; genitalia brownish yellow, rather small with very distinct structure (Figs 1–2). Legs pale yellow, hind femora dark brown on apical third, mid femora



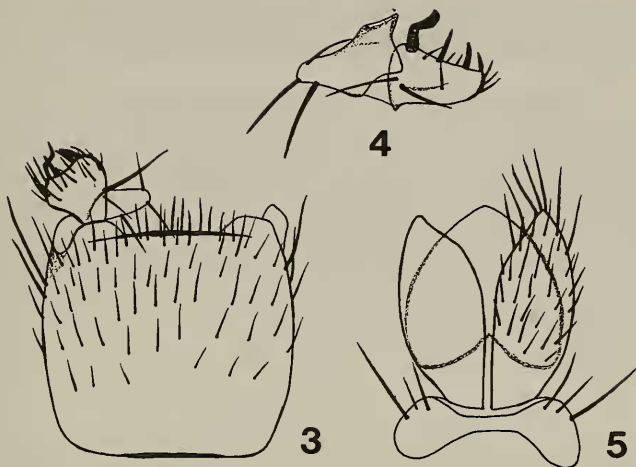
Figs 1–2. *Mycetophila uliginosa* sp. nov. 1. Ventral view of male genitalia, with left dorsal stylomere deflected. 2. Dorsal view of male cerci.

narrowly brown apically; fore tibia with 1–2 short a–d bristles near tip; mid tibia with 3 a, 1 a–d, 4 d, 3 (–4) v, 2 p near tip; anterior setulae all brown; hind tibia with 6 a, 5 d (basal shorter) without shorter bristles between, 2–3 short p near tip; first row of anterior setulae brown on apical three quarters, next three rows entirely yellow, more ventral rows brown apically; hind coxae without long posterior bristles; hind femur with 4–6 a–v bristles on apical third. Wings with yellowish membrane bearing two brown marks; median brown spot from R1 to M2 including Rs and bases of cells R5 and M1; sinuous preapical band well beyond tip of R1, reaching tip of R5, extending across M2 but not reaching CuA1, narrowed in median fork (holotype) or distinctly interrupted for middle third of fork (paratype); wing tip faintly brown around M1 and faint round spot behind basal half of CuA2; vein R before Rs with 15 setulae below; M before r–m with 2 setulae below apically. Wing length 2.8 mm (paratype), 3.0 mm (holotype).

Holotype: ♂ Berks., Cothill, 2.x.1977, wooded fringe of fen (J. W. Ismay). Paratype: ♂, Beds, Flitwick Moor, 13.vii.1978 (J. H. Cole).

Discussion

In Laffoon's key *M. uliginosa* runs with *laponica* to the *foecunda* Johannsen and *percura* (Laffoon) couplet in group E; the genitalia are close to *foecunda*, which is evidently a sister species, but there are small differences in the shape and chaetotaxy of the stylomeres, according to the figures given by Laffoon (1956) and it is considered to be a distinct species pending comparison of more material. In Edwards' key it runs to '*obscura* Dziedzicki', (= *dziedzickii* Chandler, figured by Chandler, 1977a) which has vein tb (= M before r–m of Laffoon) setulose beneath and short bristles interspersed with the long d setae on the hind tibia. It also resembles *dentata* Lundström and *blanda* Winnertz, which belong to group E of Laffoon, but again differs in the presence of short d bristles on the hind tibia and obviously in genital characters. Also *dentata* has longer posterior setae on the hind coxae and *blanda* has the second row of anterior setulae on the mid tibia yellow; both species have the hind femur only narrowly dark apically. I understand from Dr P. Laštovka that a similar species to *uliginosa* exists in Czechoslovakia.



Figs 3–5. *Mycetophila gratiosa* Winnertz. 3. Ventral view of male genitalia, with right stylomeres removed. 4. Internal view of right stylomeres. 5. Dorsal view of male cerci.

Mycetophila gratiosa Winnertz, 1863

This species is very similar to *luctuosa* Meig., to which it runs in Laffoon's key (group F). The differently shaped ventral stylomere and overall smaller size of the hypopygium (Figs 3–5) distinguish *gratiosa* from *luctuosa*; the figures of *gratiosa* by Dziedzicki (1884) are based on Winnertz's type and the apparent differences from those given here are probably not significant. It has been rarely recorded; Kröber (1955) gave a German record and Matile (1969) cited a male from Iran.

In Edwards' key it runs rather to *occultans* as its scutellum is entirely dark and there are three v bristles on the mid tibia (also sometimes in *luctuosa*) but its distinct preapical wing band is an obvious difference. The body is mainly slightly shining black but a small humeral spot and the anterior spiracle are yellow. *M. luctuosa* has a duller mesoscutum and the scutellum broadly yellow on the disc.

The two examples seen differ in size and intensity of wing markings: the larger (wing length 2.9 mm) has darker wing markings with a broader preapical band reaching the hind margin near CuA1; the smaller (wing 2.5 mm) has the preapical band narrower and interrupted in the median fork.

Material examined. Surrey: Chobham Common, Gracious Pond, 16.x.1984, 2 ♂ (P. J. Chandler).

Mycetophila mohilevensis Dziedzicki, 1884

M. mohilevensis has very characteristic genital structure and can be readily recognized from the figures of a Bjelo-Russian male by Dziedzicki (1884), reproduced by Landrock (1927). In Edwards' key it runs to *finlandica* Edwards, which it resembles in having three separate brown stripes on the dull yellow thoracic dorsum. This and *v-nigrum* Lundström (see below) both run to *alberta* Curran in Laffoon's key (group F) and both differ from *finlandica* in lacking long posterior setae on the hind coxae and in all the anterior setulae on the hind tibia being dark, as well as having a broader more compact preapical wing marking stopping short in the middle of cell R5.

Material examined. Inverness: Dalnapot, 15.vi.1982, wooded flush, ♂ (I. F. G. McLean); Perthshire: Camusurich, 6.vii.1979, ♂ (P. Skidmore).

Mycetophila v-nigrum Lundström, 1913

This species runs to couplet 23 in Edwards' key, differing from the two alternatives, but agreeing with *lamellata* Lundström, added by Edwards (1941), which also runs to here in that its scutellum is mainly dark on the disc. *M. lamellata* is a locally common southern species, which differs most obviously in the broadly yellow sides of the mesoscutum. *M. v-nigrum* differs from both *lamellata* and *mohilevensis* in the dorsum being mainly dull black with broad yellow humeral areas occupying a third of its width and a narrow yellow fore margin. Lundström (1913) figured the genitalia of both sexes.

Material examined. Dunbarton: Bonhill, 23.iv.1907, ♂ (J. R. Malloch, Royal Scottish Museum); Inverness: Belladrum Burn, 16.vi.1984, ♂ (A. E. Stubbs).

Mycetophila lastovkai Caspers, 1984

Caspers described this species from West Germany, comparing it with *marginata* Meig., which it closely resembles. The genitalia, figured by him are, however, quite distinct. In the specimens of *lastovkai* examined the thoracic dorsum is broadly yellow at the sides with more or less fused dark stripes on the disc, as in many examples of *marginata*.

Material examined. Cornwall: Maudlin Valley woods, 6.vii.1983, ♂ (I. F. G. McLean); Hants.: New Forest, Eyeworth Wood, 6.vi.1987, ♂ ♀ (P. J. Chandler).

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REFERENCES

- Caspers, N. 1984. *Mycetophila lastovkai* sp. n., eine neue Pilzmücke aus dem Hunsrück (Bundesrepublik Deutschland). *Spixiana* 7: 315–318.
- Chandler, P. J. 1977a. Studies of some fungus gnats (Diptera: Mycetophilidae) including nine additions to the British list. *Syst. Ent.* 2: 67–93.
- Chandler, P. J. 1977b. *Mycetophila strigatoides* (Landrock): an overlooked British fungus gnat (Diptera: Mycetophilidae). *Entomologist's Rec. J. Var.* 89: 323–325.
- Chandler, P. J. 1987. New data on Irish fungus gnats (Diptera: Mycetophiloidea) including 51 species new to the Irish List. *Bull. Ir. biogeog. Soc.* 10: 2–27.
- Dziedziński, H. 1884. Przyczynek do Fauny owadów dwuskrzydłych. Gatunki rodzajów: *Mycothera*, *Mycetophila*, *Staegeria*. *Pamiętnika Fizyograficznego* 4: 298–324, pls 5–9.
- Edwards, F. W. 1925. British fungus gnats (Diptera, Mycetophilidae) with a revised generic classification of the family. *Trans. R. ent. Soc. Lond.* 1924: 505–670, pls 49–61.
- Edwards, F. W. 1926. The Wood collection of British Diptera and Lepidoptera. *Entomologist's mon. Mag.* 62: 22.
- Edwards, F. W. 1941. Notes on British fungus gnats (Diptera, Mycetophilidae). *Entomologist's mon. Mag.* 77: 21–32, 67–82.
- Krober, O. 1955. Nachtrage zur Dipterenfauna Schleswig-Holsteins und Niedersachsens (1933–35). *Vh. von nat. Heimatf.* 32: 123–318.
- Laffoon, J. 1956. A revision of the Nearctic species of *Fungivora* (Diptera, Mycetophilidae). *Iowa State College J. Sci.* 31: 141–340.
- Landrock, K. 1911. Zwei neue Pilzmücken aus Mahren. *Wien ent. Zeit.* 30: 161–167.
- Landrock, K. 1914. Eine neue Art der Pilzmückengattung *Mycetophila* Meig. *Wien ent. Zeit.* 33: 201–202.

- Landrock, K. 1927. Fam. 8. Fungivoridae (Mycetophilidae). In *Die Fliegen der Palaearktischen Region*, Ed. E. Lindner, Lieferung 14, 196 pp., 13 pls.
- Landrock, K. 1940. Pilzmücken oder Fungivoridae. In *Die Tierwelt Deutschlands*, Ed. F. Dahl, 38: 1–166, Jena.
- Laštovka, P. 1963. Beitrag zur Kenntnis der europäischen *Fungivora*-Arten aus der Gruppe *vittipes* (Zetterstedt) (Diptera, Fungivoridae). *Acta Soc. ent. bohemoslov.* 60: 312–327.
- Laštovka, P. 1972. Holarctic species of *Mycetophila ruficollis*-group (Diptera, Mycetophilidae). *Acta Soc. ent. bohemoslov.* 69: 275–294.
- Laštovka, P. & Kidd, L. N. 1974. Review of the British and notes on other species of the *Mycetophila ruficollis*-group, with the description of a new species (Diptera, Mycetophilidae). *Entomologist's mon. Mag.* 110: 203–214.
- Laštovka, P. & Matile, B. 1974. Mycetophilidae (Diptera) de Mongolie. *Acta Zool. Acad. Sci. Hung.* 20: 93–135.
- Lundström, C. 1906. Beiträge zur Kenntnis der Dipteren Finlands. I. Mycetophilidae. *Acta Soc. Fauna Fl. Fennica* 29 (1): 1–50, pls. i–iv.
- Lundström, C. 1913. Neue oder wenig bekannte europäische Mycetophiliden. *Ann. hist. nat. Mus. nat. Hung.* 11: 305–322.
- Lundström, C. 1916. Neue oder wenig bekannte europäische Mycetophiliden. IV. *Ann. hist. nat. Mus. nat. Hung.* 14: 72–80.
- Matile, L. 1969. Contribution à la faune de l'Iran. 14. Diptères Mycetophilidae des provinces caspiennes. *Ann. Soc. ent. France* (N. S.) 5 (1): 239–250.
- Matile, L. 1977. Catalogue provisoire des Diptères Mycetophilidae de la Faune de France. *Bull. Mus. natn. Hist. nat.*, Paris, (3) 456, Zool. 319: 621–655.
- Plassmann, E. 1970. Die Fungivoriden-Sammlung des Senckenberg-Museums Frankfurt a. M. *Senckenbergiana biol.* 51: 387–391.
- Plassmann, E. 1976. Vierter Nachtrag zu der Mycetophiliden Sammlung des Senckenberg-Museums Frankfurt am Main. *Senckenbergiana biol.* 59: 371–388.
- Plassmann, E. 1979. Pilzmücken aus Messaure in Schweden. II. Luftström-Fallenfange (Insecta: Diptera: Mycetophilidae). *Senckenbergiana biol.* 59: 371–388.
- Plassmann, E. 1980a. Neue Pilzmückenfange aus dem Allgäu (Diptera: Mycetophilidae). *Mitt. Munch. Ent. Ges.* 70: 15–34.
- Plassmann, E. 1980b. Pilzmücken aus Messaure in Schweden. III. Lichtfällenfange. *Senckenbergiana biol.* 60: 175–189.

